

Length 58 mill. ; diam 28 mill.

Hab. Nehone Bay, North West' Coast of New Caledonia.

This new and interesting species is quite distinct from any other form found in New Caledonia, the aperture is not earshaped and is destitute of any denticulation on the columella; it was found in an old deserted native village named Bonebondia, by my kinsman Mr. George Joseph Rossiter, this year, while selecting land for a plantation. This part of the island is quite new to the collector in all branches; I express my thanks to the finder for his liberality in sending me eight splendid examples.

ON THE NOMENCLATURE AND DISTRIBUTION OF THE GENUS
PYTHIA, *Bolton*.

BY JAMES C. COX, M.D.

The genus *Pythia* was established by *Bolton* in 1798 in a Catalogue of his private Museum, edited by *Roding*.

The family *Auriculacea* of *Blainville*, of which *Pythia* is one of the genera, bears date 1824. The *Auriculidæ* are, says *Pfeiffer*, "a family of *Mollusca*, which breathe the external air by lung-like organs, and have no operculum, and are distinguished from the other families of *Pulmonata* by the following characters :

"The Animal is hermaphrodite; its head terminates in an obtuse, somewhat fringed snout; tentacles two, rather cylindrical which cannot be retracted like those of *Helicidæ*; eyes situated near the inner base of the tentacles; mantle thin with the margin thickened; foot elongated, bearing on its middle the spiral part of the body."

"Shell spiral, variously shaped; pillar generally plaited in all ages; body of the penultimate whorl usually toothed or plaited;

peritreme sharp and straight or expanded, thickened, often toothed or transversely ribbed."

And has established the following division of the Family :

Family AURICULACEA, Blainville.

1st Sub-Family Otinea.

Which is divided into two genera.

A. Otina, Gray.

B. Camptonyx, Benson.

2nd Sub-Family Melampea.

Is divided into three genera.

C. Melampus, Montford.

D. Marinula, King.

E. Pedipes, Adanson.

3rd Sub-Family Auriculea.

Is divided into nine genera.

F. Pythia, Bolton, the genus now under consideration.

G. Plecotrema, H. and A. Adams.

H. Cassidula, Ferussac.

I. Auriculus, Montfort.

K. Alexia, Leach.

L. Blauneria, Shuttleworth.

M. Luconia, Gray.

N. Coilostele, Benson.

O. Carychium, O. F. Müller.

The genus *Pythia* was defined by *Pfeiffer* in 1856 in his *Monographia Auriculaceorum Viventium* as follows—"Shell depressed ovate; whorls provided on both sides with varices, forming a more or less distinct zigzag streak on the compressed sides; aperture externally wide, narrowed within by a strong collumellar, and several strong parietal plaits; right margin of the peristome furnished within with an oblique dentiferous callus, which usually appears externally."

The most recent Monograph written on this genus was in 1876, by the late lamented Louis Pfeiffer, in his *Monographiæ Auriculaceorum*, it was in fact the last work written by that able and accomplished author, in which he records no less than forty-eight species of this genus and divides them into four sections.

1st Those species with the umbilicus transversely rimate.

2nd Those with the umbilicus rather closed.

3rd Those where the umbilicus is openly perforated or umbilicated.

4th Doubtful species.

I am not inclined to place much value on the division of the genus by the condition of the umbilicus. I find that it varies very much in the same species in mature specimens even collected at the same locality. Since the publication of the valuable Monograph mentioned, four other species have been described, so that up to the present date I find the number of species recorded as *fifty-two*.

Many of the species recorded by Pfeiffer he had never had an opportunity of examining, otherwise his master-band, I am quite sure, would have considerably reduced this number. Pfeiffer was too honourable a Monographer to overlook or despise the work of his fellow Conchologists; he never rejected the records of others until he had had an opportunity of examining the specimens himself, then he was not slow to point out what he considered erroneous repetition, but it was always done with a respect that has made his loss so universally lamented.

This genus, like many others, has received a variety of names, in fact up to a certain period it would almost appear that every author writing on the subject considered it necessary to give it a new appellation. The first species of the genus recorded was by Linneus in 1758, in his *Systema Naturæ*, 10th edition, Vol. I., p. 768, No. 571, as *Helix Scarabæus*; this same species was

described in 1774 by O. F. Müller as *Helix Pythia*, in his *Historia Vermium*. In 1798 Bolton described it as *Pythia Helicina*, and in 1810 Montford described this same species as *Sarabus Imbrium*. In 1822, Lamarck described it as *Auricula Scarabæus*, in his *Historie des Animaux sans Vertebres*, and subsequently in 1837 Beck described it as *Polydonta Listoriana*. Each of these generic names in its turn have been used by Monographers to place this and other species of the genus under, but it is evident from the dates given that the name *Pythia* has priority, still some able conchologists think differently and up to a very recent date species of this genus continue to be described as *Scarabus*. In the beautifully illustrated Monograph of this genus by the late Lovel Reeve, the species are all described as *Scarabus*. This liberty on the part of authors is much to be regretted as it adds considerably to the trouble of Nomenclature, which every year it is felt more and more necessary to give in full in writing on any genus or species.

Of the fifty-two species of which I have recorded the nomenclature and distribution, it will be found that all are strictly tropical and none of them are found on the shores or on islands washed by the Atlantic Ocean. Their true position is very limited, and ranges from between 25° North Latitude and 25° South Latitude and 80° East Longitude and 130° West Longitude. Commencing from Ceylon in about 80° East Longitude, where we find two species, we have to travel east to find the homes of this peculiar genus, no species has been recorded as coming from Madagascar, Mauritius or the East Coast of Africa; two or three species are found in China, much farther North than Ceylon, others again on the Southern shores of India and several at the Philippine Isles; step by step we trace them from the Malay Peninsular to Sumatra, Borneo, Celebes, and through the groups of small Islands to the Caroline Islands northwards, to the Southern shores of New Guinea and probably on the Northern shores also if they were looked for; recent researches have traced

their presence on the North-east shores of our great Continent, between this point and the Caroline Islands moving east we find them almost universally distributed over the Islands met with as far as 130° of West Longitude, including the Admiralty, Solomon, Marshall, Louisiade, Gilbert, Ellice, New Hebrides, New Caledonia, Loyalty, Fiji, Navigators, Friendly, Cook and Society Islands; they have not been found to pass as far East as the American Coast in the Pacific, nor has New Zealand to the South been favoured with their presence.

From these facts it is evident that this genus will always be of importance to Australasian Collectors. Every lot of shells I have received from the Pacific Islands contains specimens in more or less abundance of this genus; in the Solomon Group especially, they are very abundant and extremely variable in their size, shape, solidity and other characters; within a very few years I believe that their exact distribution will be almost perfectly known and if I am not mistaken, the number of species instead of increasing will be materially lessened, as I feel sure that many so called species are mere local varieties. I trust that by freely circulating this paper amongst the collectors in the Pacific and those of our compeers in other parts of the world, the objects I have in view may be attained, and our Australian Collectors may be induced to pay more attention to this genus than it has hitherto found at their hands, and to record their experience. The facts now recorded are far from perfect, still they are the observation of years and are worthy of notice.

1*** *PYTHIA ABBREVIATA*, *Blainville*.

Scarabus abbreviatus, Blain., in Dictionaire des Sciences Naturelles Vol xlvi.iii., p. 31, 1827.

Polydonda abbreviata, Beck, in Index Mollus., p. 101, 1837.

Pythia ? abbreviata, Pfr., in Synop. Auric. in Malak. Blatt., p. 149, 1854.

Pythia abbreviata, Pfr., in Mon. Auric. Viv. p. 85, 1856; Pfr., in Brit. Mus. Cat. Auriculidæ, p. 64, 1857; Pfr. in Mon. Auriculaceorum, p. 341, 1876.

Habitat. Marion de Proce, a small isolated island of the Indian Ocean.

Pfeiffer who has examined more closely into this genus than any other author, considers this a very doubtful species.

2*** PYTHIA ACUTA, *Hombon et Jacquinet*.

Scarabus acuta, Homb. et Jacq., in Zoologie du Voyage au Pôle Sud., Vol. v., p. 39, pl. 10, fig. 1—3.

Pythia acuta, Beck, in Index Mollus., p. 104, 1837, is according to Pfeiffer, *Marinula acuta*, *Orbigny*, see Pfr., Mon. Auric. Viv. p. 60, 61, 1856; Pfr., in Mon. Auric. Viv., p. 98, 1856; Pfr., in Brit. Mus. Cat. Auric., p. 74, 1857; Pfr. in Mon. Auriculaceorum, p. 342, 1876; Pease, in Pro. Zool. Soc. Lon., p. 477, 1871.

Habitat. Hogolen Islands. *Pease*, in Pro. Zool. Soc. Lon., p. 477, 1871.

3*** PYTHIA ALBOVARICOSA, *Pfeiffer*.

Pythia albovaricosa, Pfeiffer, in Zeitschrift für Malakozoologie, p. 190, 1853; Pfr., in Mon. Auric. Viv., p. 87, 1856; in Brit. Mus. Cat. Auriculidæ, p. 66, 1857, by Pfeiffer; in Pfr's. Synopsis Auriculaceorum in Malak. Blatt. p. 145, i., 1854; in Novitates Conch. by Pfr., Vol. i., p. 6, pl. iii., fig. 1, 2, 1854—1860; H. and A. Adams, Gen. Recent Moll., p. 240, Vol. ii., 1853—1856; in Pfr's. Mon. Auriculaceorum, p. 341, 1876.

Scarabus albovaricosus, in Reeve's Conc. Icon., Vol. xii., Mon. Scarabus, Sp. 4, pl. i., fig. a. b., 1860.

Habitat. Island of Celebes, *Pfr.*, in Brit. Mus. Cat. The same locality is given by Reeve in his *Conc. Icon.* on the authority of Cuming—should this be correct it is strange that no specimens have found their way into the Indian Museum at Calcutta, at

least no record of it is made by Mr. Geoffroy Neville, the able and accomplished author of the "Hand List of Mollusca in the Indian Museum at Calcutta, 1878;" from this fact I doubt if it is found there at all.

It is one of the most abundant and widely distributed species at the Solomon Islands, and it is the largest species found there. I have specimens of it from Makera Harbour, San Christoval Isl., Ugi, a small island off San Christoval, also Santa Catalina and Isabel Islands all of the Southern division of the Solomon Group, so far I have not received any specimens north of these localities.

4*** PYTHIA ARGENVILLEI, *Pfeiffer*.

Pythia Argenvillei, Pfr., in Zeitschrift für Malakozoologie, p. 191, 1853; in Pfr., Synopsis, Auric, in Malak. Blatt i., p. 145, 1854; Pfr's., Mon. Auric. Viv. p. 96, 1856; Pfr. in Brit. Mus. Cat. Auriculidæ, p. 73, 1857; Pfr. Novet. Conch., Vol. iii., p. 361, pl. 83, fig. 15-17; Pfr's. Mon. Auriculaceorum, p. 342, 1876; D'Argenville, La Conch. Augmentée de la Zoömorphose, 1757, t. 9 (12) f. T.; H. and A. Adams, Gen. Rec. Moll., Vol. ii., p. 240, 1853 and 1856.

Searabus Argenvillei, Reeve, Conc. Icon. Mon. Scarabus, Vol. xii., Sp. 24, pl. iii., fig. 24, 1860; at least I presume this is Pfeiffer's species, but the latter named author is quite ignored by Reeve as the describer of the species; it would appear from Reeve's Mon. that the species was his own. Strange to say also, Reeve does not give any habitat for this species, although it was recorded by Pfeiffer in 1853, some eight years before Reeve's Monograph was published.

This species is not recorded by Paetel in his Catalog der Conchyliensammlung, 1873.

Habitat. North Coast of Australia. *Pfeiffer*, Brit. Mus. Cat.

This is an abundant, but very local species. I have never received it from any other locality than the one as above recorded.

It is also very constant in its characters. I am unable to ascertain in what way it is referred to by D'Argenville as mentioned by Pfeiffer.

Pfeiffer records Var. B. a small, pale grey variety, I presume from the same locality scarcely worthy of record.

5 *PYTHIA AVELLANA*, *Reeve*.

Scarabus avellana, *Reeve*, *Conch. Icon.*, Vol. xii., genus *Scarabus* 1860, Spe. 27, pl. iii., fig. 27.

Habitat. The Island of Madura, near Java. *Reeve*, on the authority of *Cuming*.

Pfeiffer has not taken any notice of this species in his *Monograph on the Auriculacæ* published in 1876. *Paetel* has followed his example, and according to *G. Neville*, no specimens of it have reached the Indian Museum at Calcutta. I have not *Issel's Catalogue* to refer to, otherwise it might clear up difficulties and doubts.

6*** *PYTHIA BORNEENSIS*, *A. Adams*.

Scarabus borneensis, *A. Adams*, in *Proceedings of the Zoological Society of London*, 1850, p. 152; in *Reeve, Conc. Icon. Sp.* 11, pl. ii., 1860; in *Issel's Molluschi Borneensis*, p. 60, 1874; *A. Adams*, in *Ann. and Mag., Nat. Hist.*, Vol. viii., p. 70.

Pythia borneensis, in *Pfr's Synopsis Auriculaceorum* in *Mal. Blätt.* i., 1854, p. 145; in *Pfr's Mon. Auric. Viv.* p. 95-96, 1856; in *Pfr's Novitates Conch.*, Vol. iii., pl. lxxxiii., fig. 11, 12, p. 359 (*not* pl. xxviii, mentioned in *Mon. Auric.* 1876, p. 342); in *Pfr's Mon. Auriculaceorum*, p. 342, 1876; in *Pfr's Brit. Mus. Cat. Auriculidæ*, p. 72, 1857; in *H. and A. Adams, Gen. Rec. Moll.*, Vol. ii., p. 240, 1858.

Habitat. Borneo, *Pfr.*, *Reeve*, on the authority of *Cuming*. *Issel* includes it in his *Molluschi Borneensis*, but it is not recorded by *G. Neville* in his *Hand List of Mollusca* in the Indian

Museum at Calcutta, 1878. Nor is this species included by Paetel in his Catalogue der Conchylien, Sammbung, 1873. I can only conclude that this species is either extremely rare, not having been seen by these authors, or that some doubt exists in their minds as to its being a distinct species.

7**** PYTHIA CARINATA, *Beck.*

Polydonta carinata, *Beck.*, Indian Molluscorum presentis aevi Musei prine august Christiani Frederici, 1837, p. 101, n. 1 (non discripta).

Pythia ? carinata, in Pfr. Mon. Auriculaceorum, 1876, p. 343; in Pfr., Mon. Auric. Viv., p. 79, 1856, see obs. 2.

Habitat. Sinsapore or Sincapore, *Beck.*

No mention is made to this species in the Hand List of Mollusca in the Indian Museum published at Calcutta by G. Nevill in 1878.

The habitat given by *Beck*, Sinsapore or Sincapore (Singapore) has not been verified by those who have been working recently in that field.

8*** PYTHIA CASTANEA, *Lesson.*

Scarabus castaneus, *Lesson*, in Voyage de la Coquille, Zool. ii., p. 336, p. x., fig. 7, 1830; in Martini and Chem. Conch. Cab. Auriculacea, p. 61, 1844, pl. ix., fig. 1, 2; in Reeve, Conch. Icon. Sp. 3, Vol. xii., pl. i., fig. 3, Mon. Scarabus, 1860; Reeve in Ann. and Mag. Nat. Hist., Vol. ix., p. 220, 18 , pl. iv., fig. 10; in Reeve, Conch. Syst., Vol. ii., pl. 188, fig. 10, 1842; A. Adams, in Proc. Zool. Soc., 1850, p. 150; A. Adams, in Ann. and Mag. Nat. Hist., Vol. viii., p. 69, 18 .

Polydonta castanea, in *Beck's* Index Mollus. p. 101, 1837.

Auricula scarabeus, Var. *Desh.* in Encyclopédie Methodique, nouv Ed. by *Lamarck*, p. 328, 1838.

Pythia castanea, Mörch, in *Catalogus Conchyliorum Comes de Yoldi*, p. 37, 1852; Pfr. in *Synopsis Auric. in Malak. Blätt.*, p. 149, 1854; Pfr., in *Mon. Auric. Viv.*, p. 91, 1856; Pfr., in *Brit. Mus. Cat. Auriculidæ*, p. 69, 1857; Pfr., in *Mon. Auriculaceorum* p. 342, 1876; Neville, in *Hand List of Mollusca in the Indian Museum at Calcutta*, p. 221, 1878.

Habitat. Waigiou, Island of Zebu, Philippine Islands, Pfr. in *Mon.* of 1876. Waygeeo Pfr., on the authority of Lesson. Island of Moluccas, Pfr. on the authority of Beck. Sibonga, Island of Zebu, Philippine Islands (in the Woods) Reeve on the authority of Cuming. Katchall, Nicobar Islands and from Borneo Strait, G. Neville, on the Authority of Dr. Stoliczka.

G. Neville in his *Hand List of the Mollusca in the Indian Museum at Calcutta*, p. 221, makes a *var minor* of this species and which he considers identical with A. Adams' species *imperfurata* "[juv? = *P. imperfurata*, A. Ad.]" collected by Stoliczka and de Roepstorff at Camorta and Nicobars.

Neville also considers it propable that *Pythia tortuosa* of Mousson is only a variety of this species judging from the specimens he had received from Futuna ex Museum Godeffroy.

9*** PYTHIA CECILLEI, *Philippi*.

Scarabus cecillei, Phil. in *Zeitschrift für Malakozoologie*, p. 122, 1847; A. Adams, in *Pro. Zool. Soc.*, 1850, p. 149; Reeve, *Mon. Scarabus* in *Conc. Icon.*, Vol. xii., Sp. 20, pl. iii., fig. 20, 1860; A. Adams, in *Ann. and Mag. Nat. Hist.*, Vol. viii., p. 68.

Pythia Cecillei, Pfr. in *Mon. Auric. Viv.* p. 97, 1856; Pfr., in *Brit. Mus. Cat.* p. 74, 1857; Pfr., in *Novitates Conch.* Vol. iii., pl. lxxiii., (not xxviii.) p. 355, fig. 3, 4. 1867, 1869; Pfr. in *Mon. Auriculacea*, p. 342, 1876; Paetel, in *Catalog der Conch.*, Sammlung, p. 114, 1973; H. and A. Adams, *Gen. Rect. Moll.*, Vol. ii., p. 240, 1858.

Habitat. China, on the authority of Admiral Cecille, of the French Navy.

This species does not appear to have found its way into the Indian Museum at Calcutta.

10*** PYTHIA CELEBENSIS, *Pfeiffer*.

Pythia celebensis, Pfr., in Proceedings of the Zoological Society of London, 1854, p. 299; Pfr. in Mon. Auric. Viv., p. 89, 1856; Pfr. in Brit. Mus. Cat. Auriculidæ, p. 67 and 68, 1857; Pfr., in Mon. Auriculaceorum, p. 342, 1876; H. and A. Adrms, in Gen. Rec. Moll., Vol. ii., p. 240, 1858.

Scarabus celebensis, Reeve, Mon. Scarabus, Conc. Icon. Sp. 1, pl. 1, fig. 1, 1863.

Habitat. Isle of Celebes, Pfr. and Reeve, on the authority of Cuming.

11* PYTHIA CEYLANICA, *Pfeiffer*, (Ceylonica).

Pythia Ceylanica, Pfr., in Zeitschrift für Malakozologie, p. 192, 1853; Pfr., in Synopsis Auric. in Mal. Blätt., p. 149, 1854; Pfr. in Mon. Auric. Viv. p. 78, 1856; Pfr. in Mus. Cat. Auriculidæ, p. 58, 1857; Pfr., in Mon. Auriculaceorum, p. 335, 1876; Pfr. in Novit. Conch., Vol. iii., p. 354, pl. lxxxiii., fig. 1, 2; H. Neville's Enumeratio Heliceorum et Pneumonoporum Insulæ Ceylon, p. 4, 1871.

Pythia Ceylonica, G. Neville, in Hand List Moll. in Ind. Mus. p. 222, 1878.

Scarabus Ceylanicus, Reeve, Mon. Scarabus, Vol. xii., Conc. Icon. Sp. 12, pl. iii.

Habitat. Ceylon, Pfr. and Reeve, on the authority of Cuming. Balipiti, Ceylon, G. Neville, in Hand List Mol. Ind. Mus. at Calcutta, 1878. Neville, it will be observed, has altered the spelling of Pfr's name from Ceylanica to Ceylonica, no doubt it was a mistake originally by Pfr., and the error has been per-

petuated. I see no reason why the correction should not be made without changing the authority as Mr. Neville has done.

12*** PYTHIA CHALCOSTOMA, A. Adams.

Scarabus chalcostomus, A. Adams, in Proceedings of the Zoological Society of London, 1850, p. 152; A. Adams, in Ann. and Mag. Nat. Hist., Vol. viii., p. 70, 2nd series; Reeve, in Conc. Icon. Mon. Scarabus, Vol. xii., 1860, Sp. 8, pl. i., fig. 8; Gassies, Faune Conchyliologique tenestre et Fluvio-lucustre de la Nouvelle Calédoniæ, p. 55, pl. iii., fig. 5, part i., 1863, also in part ii., p. 100, 1869.

Pythia chalcostoma, Pfr., in Synop. Auric. in Malak. Blätt, p. 149, 1854; Pfr., in Mon. Auric. Viven, p. 87, 1856; Pfr., in Brit. Mus. Cat. Auric. p. 66, 1857; Pfr., in Mon. Auriculaceorum, p. 341, 1876; H. and A. Adams, in Gen. Rec. Moll., Vol. ii., p. 240, 1859; G. Neville, in Hand List of Moll. in the Indian Mus. at Calcutta, p. 222, 1978 [?= *P. Lessoni*, Blain., Var.].

Habitat Solomon Islands, D'Urville, Pfr., and Reeve, the two latter on the authority of Cuming. Isles of Art and Tuo, New Caledonia, Montrouzier. New Caledonia Neville on the authority of Morelet, and Maré, Lifu, Loyalty Islands, on the authority of F. L. Layard. Mr. Brazier found it on Ysabel Island, Solomon Islands. I possess specimens of it from the same Island, and also from Santa Catalina a small island close to San Christoval of the Solomon group.

The figure given by Reeve of this species differs so very much from the figure of it given by Gassies, that I cannot help thinking there must be some mistake about it. I have never seen a specimen at all approaching Reeve's figure from New Caledonia, the specimens from the Solomon Islands not only resemble Reeve's figure, but correspond in every way with the original discription of the species.

13*** PYTHIA COSTULATA, *Kuster*.

Scarabus costulatus, Kuster in Martini and Chemnitz, Conchylien Cabinet Mon. Auriculacea 1844, pl. 9, fig. 3.

Pythia costulata, Pfr. in Synop. Auric. in Malak., Blätt., p. 149, 1854; Pfr. in Mon. Auric. Viv. p. 87, 1856; Pfr. in Brit. Mus. Cat. Auric. p. 65, 1857; Pfr. in Mon. Auriculaceorum, p. 341, 1876.

Habitat. East Indies, Kuster, and Pfr.

This species is not figured by Reeve, nor is it mentioned in G. Neville's Hand List of Indian Mollusca, the latter fact throws considerable doubt on the habitat recorded; it would be interesting to know in what Museum the original type specimens are to be found.

14*** PYTHIA CRASSIDENS, *Hombroen et Jacquinot*.

Scarabus crassidens, Homb. et Jacq., Zoologie du Voyage au Pol. Sud., Vol. v., p. 40, pl. 10, fig. 12, 13, 14.

Pythia crassidens, Pfr., in Mon. Auric. Viven., p. 99, 1856; Pfr., Brit. Mus. Cat. Auriculidæ, 1857, p. 74; Pfr. Mon. Auriculacea, 1876, p. 343.

Habitat. Isle of Amboyna, Homb. et Jacq., also the same by Pfr. in Brit. Mus. Cat.

15** PYTHIA CROSSEANA, *Gassies*.

Scarabus crosseanus, Gassies, in Journal de Conchyliologie, Vol. xviii., p. 144, 1870; in Faune Nouv Calédonie part ii., p. 102, pl. 7, fig. 4, 1873.

Pythia crosseana, Pfr., in Monographiæ Auriculaceorum, 1876, p. 339.

Habitat. Island of Ouvea, Loyalty Islands, Gassies, on the authority of Lambert.

16*** PYTHIA CUMINGIANA, *Petit.*

Scarabus Cumingiana, Petit, in the Proceedings of the Zoological Society of London, 1843, p. 3; Kuster in Martini and Chemnitz Conchylien, Cabinet, Mon. Auriculacea, p. 63, pl. 9, fig. 5, 6, 5* 1844; A. Adams and Reeve, in Voy. Samarang, Mollusca, p. 56, pl. 14, fig. 16, 1948-1850; A. Adams in Pro. Zool. Soc., Lond., 1850, p. 150; A. Adams, in Ann. and Mag. Nat. Hist. 2nd Series Vol. viii., p. 68, 18 ; Reeve in Conch. Icon. Vol. xii., Sp. 12, pl. ii., fig. 12, 1860.

Pythia Cumingiana, Pfr., in Mon. Auric. Viven., p. 89, 1856; Pfr., in Brit. Mus. Cat. Ariculacea, p. 68, 1857; Pfr., in Mon. Auriculaceorum, p. 342, 1876; Pätel, Catalog der Conchylien, Sammlung, p. 114, 1873; H. and A. Adams, in Gen. Rec. Moll. Vol. ii., p. 240, 1858.

Habitat. Boljoon, Island of Zebu and Tanhay, Island of Negros Philippine Islands, Pfr. and Reeve, on the authority of Cuming.

17**** PYTHIA DILATATA, *Beck.*

Polydonta dilatata, Beck, Index Molluscorum præsentis ævi Musei Princ August Christiani Fræderici, 1837.

Scarabus imbrium, Guérin, Iconographie du règne animal pl. vii., fig. 6? Gray, in Griffith, the Animal Kingdom by Cuvier, Mollusca et Radiata xii., 1834, pl. 27, fig. 1.

Pythia dilatata, Pfr., in Mon. Auric. Viven, 1852, p. 99; Pfr., in Brit. Mus. Cat. Auriculidæ, p. 75, 1857; in Pfr., Mon. Auriculaceorum, p. 343, 1876.

Habitat. Philippine Islands, Pfeiffer, on the authority of Griffith, in Anim. Kingdom.

18**** PYTHIA GIBBOSA, *Beck.*

Polydonta gibbosa, Beck, Index Molluscorum præsentis ævi Musei Princi August Christiani Friderici, p. 101, N. 3, 1837.

Pythia gibbosa, Pfr., in Mon. Auric. Viven., p. 99, 1852, "absque ulla indicatione"; Pfr., in Brit. Mus. Cat. Auriculidæ, p. 75, 1857; Pfr., in Mon. Auriculaceorum, p. 343, 1876.

No habitat of this supposed species has been recorded, and so far as I can discover with the limited material at my disposal it has never been described.

19** PYTHIA HEPATICA, *Pfeiffer*.

Pythia hepatica, Pfr., in Malak. Blätter p. 174, 1856; Pfr., in Novitates Conchologicæ, Vol. iii., p. 357, pl. lxxxiii. (not xxviii.) fig. 7, 8; Pfr., in Mon. Auriculaceorum, p. 338, 1876.

The habitat of this species was not known to Pfeiffer, but from his minute and careful description of the species I have no doubt it will soon be discovered.

I may mention here that all the references to Pfeiffer's plates of the *Pythia* in his Novitates Conchologicæ in his last monograph are incorrect.

I venture to predict that this species is from the North-east Coast of Australia.

20* PYTHIA INFLATA, *Pfeiffer*.

Pythia inflata, Pfr., in Zeitschrift für Malak., p. 192, 1853; Pfr., in Mon. Auric. Viven., p. 76, 1856; Pfr., in Novit. Conch. Vol. i., p. 7, 1854-1860, pl. iii., fig. 3, 4; Pfr., in Brit. Mus. Cat. Auriculidæ, p. 57, 1957; Pfr., in Mon. Auriculaceorum, p. 335, 1876.

Scarabus inflatus, Reeve, in Conch. Icon. Mon. Scarabus, Vol. xii., 1860, sp. 25, pl. iii., fig. 25; Var. Metcalf, in Pro. Zool. Soc., Lon., 1851; Issel, Molluschi Borneensis, 1864. p. 61.

Habitat. Borneo, Pfr. and Reeve, on the authority of Cuming which Issel corroborates in his recent work.

21** PYTHIA IMPERFORATA, *A. Adams.*

Scarabus imperforatus, A. Adams, in Proceedings of Zoological Society of London, 1850, p. 151; A. Adams, in Ann. and Mag. Nat. Hist. 2nd series, Vol. viii., p. 70; Reeve, in Conch. Icon. Mon. Scarabus, Vol. xii., pl. ii., Sp. 10; Issel, in Molluschi Borneensis, 1874, p. 61; in J. B. Gassies' Faune Conchyliologique de la Nouvelle-Calédonie, 2nd Part, p. 101, 1872.

Pythia imperforata, Pfr., in Synopsis Auriculaceorum in Malakozologie Blätter t., p. 145; Pfr., in Mon. Auriculaceorum Viventium, 1856, p. 80; Pfr., in Brit. Mus. Cat. p. 60, 1857; Pfr., in Monographiæ Auriculaceorum, 1876, p. 339; H. and A. Adams, in Genera Rec. Mollus., Vol. ii., 1851, p. 239-240; Patel, in Catalogue der Conchyliensammlung, 1873, p. 114; Neville, in Hand List Moll., in Indian Mus. at Calcutta, p. 521, 1878.

Habitat. The island of Borneo, Adams, on the authority of Cuming, also Reeve, on the same authority.

Camorta and Nicobars, Neville, in Hand List of Mollusca in the Indian Museum at Calcutta, on the authority of Dr. F. Stoliczka and F. A. de Roepstorff. Neville considers his specimens the *variety minor* of *Pythia castanea*, Lesson. Katow and Ethel River, New Guinea, Brazier in Pro. Linn. Soc., New South Wales, 1878, Vol. ii., p. 128; these specimens are in the Macleay Collection, Sydney, N.S.W.

22*** PYTHIA INSULARIS, *Hombroen et Jacquinet.*

Scarabus insularis, Homb. et Jac., Zoologie du Voyage au Pôl. Sud., Vol. v., p. 40, pl. 10, fig. 15, 16, 17.

Pythia insularis, Pfr., Mon. Auric. Viven., 1856, p. 85; Pfr., in Brit. Mus. Cat. Auriculidæ, 1857, p. 64; Pfr., Monographiæ Auriculaceorum, 1876, p. 341.

Habitat. Solomon Islands, Homb. et Jacq.

23* PYTHIA INTERMEDIA, *Gassies*.

Scarabus intermedius, Gassies, in Journal de Conchyliologie, 1879, p. 130; Gassies, in Faune Conchyliologique de la Nouvelle Calédonie, by J. B. Gassies, part 3rd, pl. iii., fig. 16, 1880.

Habitat. Mare, Loyalty Islands, Gassies, on the authority of Mr. Richard Rossiter of New Caledonia, a very accurate observer.

24* PYTHIA LACTEOLA, *Gassies*.

Scarabus lacteolus, Gassies, in Journal de Conchyliologie, 1879, p. 131; Gassies, in Faune Conchyliologique de la Nouvelle Calédonie par J. B. Gassies, p. 58, 1880, pl. iii., p. 3rd, fig. 15.

Habitat. Maré, Loyalty Islands, Gassies, on the authority of Mr. Richard Rossiter of Noumea, New Caledonia.

25*** PYTHIA LEKITHOSTOMA, *Reeve*.

Scarabus Lekithostoma, Reeve, in Annals and Magazine of Natural History, 1842, Vol. ix., p. 220, p. 4, fig. 6; in Reeve's Conch. Systematica, Vol. ii., p. 168, pl. 188, fig. 6, 1842; in Reeve, Conch. Icon. Vol. xii., Monograph Scarabus, Vol. xii., Sp. 2, pl. 1, fig. 2 a. b.; A. Adams, in Pro. Zool. Soc., 1850, p. 150, also in Ann. and Mag. Nat. Hist. 2nd series, Vol. viii., p. 69; in Küster, Martini et Chemnitz, Conch. Cabinet, 1844, p. 65, pl. 9, fig. 10.

Pythia Lekithostoma, Pfr., Synop. Auric. in Mal. Blat. 1854, n. 77; Pfr., Mon. Auric. Viven., 1856, p. 76; Pfr., Monographiæ Auriculaceorum, 1876, p. 336; Pfr., in Brit. Mus. Cat., 1857, p. 59. Pätel, in Catalogue der Conchyliensammlung, 1873, p. 114. G. Neville's Hand List of Mollusca in the Indian Museum at Calcutta, 1878, p. 222.

Habitat. Island of Guam, Pfr., Pätel and Neville, the latter on the authority of Prof. W. Newcombe of Cornell University, America.

I have had specimens of this species in my collection for many years, collected by Mr. Rossiter, at the Island of Guam.

26*** PYTHIA LEOPARDA, *Reeve*.

Scarabus leopardus, Reeve, in *Conchologia Iconica*, 1860, Vol. xii., Monograph *Scarabus*, Sp. 14, pl. ii., fig. 14; in Gassies, *Faune Conchyliologique Terrestre et Fluvio-lacustre de la Nouvelle Calédonie*, p. 55, pl. iii., fig. 5, 1863, part 2nd 1871, p. 100.

Pythia leopardus, Pfr., in *Mon. Auriculaceorum*, 1876, p. 342.

Habitat. Island of Tuo, New Caledonia, Gassies. Reeve acknowledges that this species is founded on very slight characters and if his figure is compared with that of Gassies, it is evident that two distinct species are figured. Reeve's figure is only an intermediate form between *undata* and his representation of *petiveriana*; *undata* again passes into *nux*, *imperfurata* and *borneensis*. The figure given of it by Gassies passes by too easy gradation into *nux*, *imperfurata*, *borneensis*, *undata* and *croseana*. A gradual gradation from one to the other is very manifest, I have specimens of *nux* before me which so thoroughly illustrate this gradation that I doubt if any of these species should stand except the one whose name has priority.

27** PYTHIA LENTIGINOSA, *Garrett*.

Pythia lentiginosa, Garrett, in *American Journal of Conchology* 1872, Vol. vii., p. 4, p. 220, pl. 19, fig. 4; Schmeltz, *Catalogue of Museum Godeffroy*, No. v., 1874, p. 87; G. Neville, *Hand List of Mollusca in the Indian Museum at Calcutta*, 1878, p. 222.

Habitat. Taviuni Island, Viti Islands Garrett; Savinni Island Neville, on the authority of Godeffroy—probably intended for Savii Island, Samoan Islands.

28*** PYTHIA MACGILLIVRAYI, *Pfeiffer*.

Pythia Macgillivrayi, Pfr., in *Proceedings of the Zoological Society of London*, 1854, p. 298; Pfr. in *Mon. Auric. Viv.*, 1856,

p. 97; Pfr., in Brit. Mus. Cat. Auriculidæ, 1857; Pfr., in Monographiæ Auriculaceorum, 1876, p. 343; Pfr., in Novit. Conch., Vol. iii., p. 360, pl. lxxxiii., fig. 13, 14. H. and A. Adams, Gen. Recent. Mollusca, Vol. II., p. 239-240. Pâtel in Cat. der Conch., p. 114, 1873.

Habitat. Island of Aneiteum, New Hebrides, Pfr., on the authority of Macgillivray.

29* *PYTHIA MAURULA*, *Gassies*.

Scarabus maurulus, Gassies, in Journal de Conchyliologie, Vol. xviii., 1870, p. 143; in Gassies Faune Novel Caledoniæ, 1871, part ii., p. 103, pl. 7, fig. 5, (non 6).

Pythia maurulus, Pfr., in Mon. Auriculaceorum, 1876, p. 335, 1872.

Habitat. New Caledonia, Gassies on the authority of Lambert, Deplanches and Viellard. I have specimens of this species from Mr. Rossiter of Noumea, from Lifou, Loyalty Islands.

30* *PYTHIA MINOR*, *Gassies*.

Scarabus minor, Gassies, in Faune Conchyliologique Terrestre et Fluvio-lacustre de la Nouvelle Calédoniæ, p. 57, pl. iii., fig. 8, 1863, part 2nd 1871, p. 190.

Pythia minor, Pfr., in Mon. Auriculaceorum, 1876, p. 336.

Habitat. Island of Tuo, New Caledonia, Gassies, on the authority of Montrouzer. I possess specimens of this species sent to me by Mr. R. Rossiter, from Prony Bay.

Care must be taken that the name of this species is not confounded with what G. Neville in his Hand List of Mollusca in the Indian Museum of Calcutta has designated a variety of *Pythia castanea*, as "Var. Minor"; the designation should be changed.

31** PYTHIA NIGRICANS, Pfeiffer.

Pythia nigricans, Pfr., in Malakozoologie, Blätter, 1857 (non 1856 Pfr.) p. 171; Pfr., in Novit. Conch., Vol. iii., 1867-1869, Sp. 482, p. 358, pl. lxxxiii., fig. 9, 10; Pfr., in Cat. Brit. Mus. Auriculidæ, 1857, p. 64; Pfr., in Monograph Auriculaceorum, p. 338, 1876.

Habitat. Unknown.

Pfeiffer's figure of this species in his *Novitates Conch.* is very like specimens found on the North-east Coast of Queensland, Australia.

32** PYTHIA NUX, Reeve.

Scarabus nux, Reeve, *Conchologia Iconica*, Vol. xii., 1860; *Monograph Scarabus*, pl. ii., Sp. 18, fig. 18; in Gassies, *Faune Conch. Terrest. et Fluv. de la Nouvelle Calédonie*, 1863, p. 56, pl. 3, fig. 7, part 2nd, p. 100, 1869 (1872).

Habitat. Balade, New Caledonia, Pfeiffer. I have specimens of this species from Lifu, Loyalty Islands, from Mr. R. Rossiter, and also specimens from Cardwell, on the North-east Coast of Queensland, a habitat which Mr. Brazier has also corroborated.

33*** PYTHIA OVATA, Pfeiffer.

Pythia ovata, Pfr., in the Proceedings of the Zoological Society of London, 1854, p. 299; Pfr. in Cat. Brit. Mus. Auriculidæ, 1857, p. 67; Pfr., in *Mon. Auriculaceorum*, 1876, p. 342; H. and A. Adams, *Genera Recent Mollusca*, Vol. ii., p. 239-240, 1858; Neville, in *Enumeratio Heliceorum et Pnaumonoporum Insulæ Ceylon adhuc detectorum*, 1871, p. 4; Pätel, in *Cat. der Conch.*, 1873, p. 114; Neville, in *Hand List of Moll. in Indian Mus. at Calcutta*, 1878, p. 222.

Scarabus ovatus, in Reeve, *Conc. Icon. Sp.* 13, pl. ii., fig. 13, 1860.

Habitat. Ceylon, Pfeiffer in 1854, Balapiti, Ceylon, G. Neville, Arakan, G. Neville, on the authority of Dr. F. Stoliczka. I have several specimens from New Guinea of this species collected by Mr. Goldie.

Mr. G. Neville enumerates a variety of this species in his Catalogue, which he suggests is the *Pythia Lessoni*, Blainville.

34*** PYTHIA PANTHERINA, A. Adams.

Scarabus pantherina, A. Adams, in Pro. Zool. Soc., 1850, p. 152, also in Ann. and Mag. Nat. Hist., 2nd Series, viii., p. 70.

Scarabus pyramidatus, Reeve, Kuster Auriculacea, in Martini and Chemnitz, Conch. Cabinet, 1844, p. 62, pl. 9, fig. 3, 4; Mousson, in Dic. Land und Susswasser-Mollusken von Java, 1849, p. 49, pl. 5, fig. 10.

Pythia pantherina, Pfr., in Syn. Auric., No. 92, also Pfr., in Mon. Auric. Viv. 1856, p. 94; Pfr., in Brit. Mus. Cat. Auriculidæ, 1857, p. 71, 72; Pfr. in Mon. Auriculaceorum, 1876, p. 342; Adams, Gen. Rec. Moll., Vol. ii., p. 239-240, 1858.

Var. B.—Chestnut-coloured with pale spots, Pfeiffer.

Scarabus petiverianus, of Ferussac, Reeve in Ann. and Mag. Nat. Hist., Vol. ix. p. 220, pl. 4, fig. 7?; also Reeve in Conch. Syst., Vol. ii., pl. 188, fig. 7?; Kuster Auriculacea in Martini and Chemnitz, Conch. Cabinet, 1844, Sp. 4, p. 11, pl. 1, fig. 7; A. Adams in Pro. Zool. Soc., 1850, p. 148; also A. Adams, in Ann. and Mag. Nat. Hist., 2nd Series, Vol. viii., p. 67.

Variety V.—Smaller, paler, more slender.

Pythia pantherina, Pâtel Catalogue der Conch. 1873, p. 114; also *Pythiasavayensis*, Mouss. = *Pythia pantherina*, A. Ad. same page

Scarabus pantherinus, Issel, Molluschi Borneensis, 1874, p. 61.

Variety S.—Pfeiffer, *Scarabus uveana*, Mousson in Journal de Conch., Vol. xiii., p. 177, 1856. Habitat Nueniona, Graffe, Uvea, Pease, in Pro. Zool. Soc., 1871, p. 477.

Habitat. Philippine Islands, Pfr. and Reeve, on the authority of Cuning. Island of Java, Zollinger. Borneo, A. Adams. Celebes, Pfr., in Brit. Mus. Cat. Auric., Nuconia, Pease, in Pro. Zool. Soc., 1871, p. 477.

It is extremely difficult to arrive at the rights of this species described first as *S. pantherina*, in 1850 by Adams, the name is continued by Pfeiffer in his Monographs of 1856-57, and 1876, and under the same name by Adams in 1858. In 1875 Pfeiffer in his Brit. Mus. Cat. Auric., claims Reeve's species *S. pyramidatus* as described and figured by Kuster, as a synonym of this species *pantherina*, in other words, that Kuster has given a figure of Adam's species *pantherina* to represent Reeve's species *pyramidatus*. Then Pfeiffer makes out that his variety B. of this species *pantherina* has been figured again by Kuster to represent Ferussac's species *petiverianus*. I must confess that the two species *petiverianus* Fer., and *pyramidatus*, Reeve, as figured by Kuster and claimed by Pfeiffer as a variety of each other require a great stretch of imagination to believe that they represent one species, especially if the figures of Kuster's are compared with the figures of Reeve of these species.

35** PYTHIA PEROVATA, *Garrett.*

Pythaperovata, Garrett, in the American Journal of Conchology, Vol. vii., part 4, p. 221, pl. 19, fig. 5, 1871-1872. Pfr., in Monographiæ Auriculaceorum, p. 340, 1876. Schmeltz, in Cat. Museum Godeffroy, V., p. 87, 1874.

Habitat. Natawa Bay and Na Viti Levu Bay, Viti Island, Garrett—"Abundant, inhabiting the margins of the Mangrove Swamps."

36* PYTHIA PETIVERIANA, *Ferussac.*

Referred to by Kuster as "*Petiver Gyrophylacii*, Naturæ et artis, 1702 to 1711, pl. 4, fig. 10." I presume figured in that work but not described.

Scarabus petiverianus, Ferussac, 'Tableaux Systematiques des animaux Mollusques, suivies d' un Prodrôme &c., 1821, p. 101, N. 3; Zoschel in Weigmanus Archiv. für Naturgeschichte 1831, i., p. 207; in Reeve's Conc. Icon. Sp. 15, pl. 11, Feb. 15, 1860.

Pythia petiveriana, Pfr., in Zeitschr für Malak., 1853, p. 128, Pfr., Mon. Auric. Viv., 1856, p. 78, also Pfr., in Brit. Mus. Cat. Auriculidæ, 1857, p. 58-59; Pfr., in Mon. Auriculaceorum, 1876, p. 336—An=*P. plicata*, Ferussac?. Pätel, in Catalogue der Conch. 1873, p. 114.

Pfeiffer in 1856 came to the conclusion that this species was not the same as described by Deshayes in Lamarck's Hist. Naturelle sans Vertebres, 2nd Edit., Vol. viii., p. 339, N. 29, as *Auricula petiveriana*, nor that described by Reeve under the same name in the Ann. and Mag. Nat. Hist., Vol. ix., 1842; or in Reeve's Conchologia Systematica, Vol. ii., 1842; he also considered that Kuster was wrong in his representation of this species in the Conchylien-Cabinet, so also was A. Adams, in his opinion, wrong in his definition of this species in his Monograph of the Scarabus published in the Pro. Zool. Soc., Lon., for 1850, p. 147. Reeve on the other hand in Conch. Icon. 1860, considers that Adams' *Scarabus pantherinus* is a synonym only of *petiveriana* and also makes Deshayes's *Auricula petiveriana* as a synonym, and omits *pantherina* altogether from his Monograph. H. and A. Adams again in 1858, did not include *petiveriana* in their list in Gen. Recent Mollusca. The figures by Kuster and by Reeve are certainly very unlike, it would be interesting to know if the original type specimen of Ferrusac has been preserved, and from what specimens the two authors took their figures. Pfr., appears never to have seen the species.

Habitat. Bengal, Petiver in Pfr. Reeve gives as a habitat on the authority of Cuming, the Island of Siguijor, Philippine Islands, in the woods and amongst stones.

37* PYTHIA PLICATA, *Férussac*.

Scarabus plicatus, Férussac, in Tableaux Systematiques des animaux Mollusques suivis d'un Prodrôme, p. 101, N. 2, 1821; Lesson, Voy. Coquille Zool. Vol. II., p. 335, N. 80, 1830; Troschel, in Weigmann's Archiv. für Naturgeschichte, Vol. i., 1838; Reeve, in Ann. and Mag. Nat. Hist. Vol. ix., p. 219, pl. 4, fig. 3, also in Conch. Syst. Vol. ii., pl. 188, fig. 3, also in Conch. Icon. Mon. Scarabus, pl. iii., sp. 3, 1860; Kuster, in Martini and Chemnitz Conch. Cabinet, p. 9, pl. i, fig. 3, 4, 1844; A. Adams, in Pro. Zool. Soc. 1850, p. 148, also in Ann. and Mag. Nat. Hist. 2nd series Vol. viii., p. 67; Benson, in Journ. of Asiatic Soc. Bengal, Vol. vi., 1836.

Pythia plicata, Moreh. Catalogue Conch. quæ reliquit D'Aguirra et Gadea, comes de Yoldi Fasc. i., 1852. Pfr., in Synopsis Auric. in Malak. Blat., Vol. i., p. 145, 1854, also in Mon. Auric. Viv., p. 76, 1856, also in Brit. Mus. Cat. Auriculidæ p. 57, 58, 1857, also Mon. Auriculaceorum, p. 335, 1876. H. and A. Adams, Gen. Rec. Moll. Vol. ii., p. 239-240, 1858.

Figured in Lisl. Hist. vive Synopsis Method. Conch. p. 577, fig. 32, 1770, also in Klein's Taulamen Methodi Ostracologicæ, pl. 1, fig. 24, 1753; also in Favarme's Troisième édition augmentée de la Conchyliologie de D'Argenville, pl. 65, fig. D. 4, 1780.

Helix scarabæus, var., Chem., Conch., ix., 2, p. 182, t. 136, fig. 1251-1252.

Helix Scarabus, var. B., Dillwyn's Descriptive Cat. of Recent Shells arranged according to the Linnean Method, Vol. ii., p. 886, 1817.

Pythia plicata. Pâtel, in Cat. der Conch., p. 114, 1873. In G. Neville's Hand List of Mollusca in Indian Museum at Calcutta, part i., p. 222, 1878.

Scarabus plicatus, Morelet, in Series Conch., Vol. ii., p. 270, 1875.

Habitat. First as given by G. Neville, Port Canning on the authority of G. Neville, Wood, Mason, Stoliczka, and Baxter.

Penang, Moulmein and Rangoon, Stoliczka; Akyab, on the authority of Dodgson. Second as given by Pfeiffer—Bangkok, on the authority of Morelet. Bengalia and Pondicherry, on the authority of Deshayes. Jaffna, on the authority of Gardner and A. Adams.

Neville does not corroborate the localities as given by Pfeiffer and it is probable therefrom that they are not correct.

38** PYTHIA POLLEX, *Hinds*.

Scarabus pollex, Hinds, in Annals and Magazine of Natural History, Vol. x., p. 82; also in Zoology of the Voy. of H.M.S. "Sulphur," Mollusca, part iii., p. 60, pl. 16, fig. 9, 10, 1845; A. Adams, in Pro. Zool. Soc., 1850, p. 150, and in Ann. and Mag. Nat. Hist. Vol. viii., 2nd series, p. 69; Reeve, Conch. Icon. Sp. 7, part i., fig. 7.

Pythia pollex, Pfr., in Syn. Auric. n. 82, also in Mon. Auric. Viv. p. 86, 1856, also in Auriculaceorum, p. 341, 1876, and in Pfr., Brit. Mus. Cat. Auriculidæ, p. 65, 1875. H. and A. Adams, Gen. Rec. Mol. Vol. ii., p. 239-240, 1858. Pâtel, in Catalog der Conchylien-Sammlung, p. 114, 1873. Mousson, in Journ de Conch., Vol. xviii., p. 133, 1870 (not in index); Schmeltz, in Cat. Mus. Godeffroy, v., p. 87, 1874.

Scarabus zonatus, Homb. et Jacq., Voy. Pôle Sud., Zool. v., p. 41., pl. 10, fig. 18-20.

Habitat. Ovalau, Fiji Islands, Garnett, also G. Neville, in Hand List of Mollusca in Indian Museum at Calcutta on the authority of E. L. Layard, Esq., and on the authority of many other private collectors.

39** PYTHIA PYRAMIDATA, *Reeve*.

Scarabus pyramidatus, Reeve, in Annals and Magazine of Nat. History, Vol. ix., p. 221, pl. 4, fig. 12, (not *Scarabus pyramidatus* of Kuster or Mousson). Reeve, in Conch. Syst., Vol. ii., pl.

188, fig. 12. A. Adams, in Pro. Zool. Soc., p. 149, 1850, also in Ann. and Mag. Nat. Hist. 2nd series, Vol. viii., p. 68.

Pythia pyramidata, Pfr., in Synop. Auric. in Mal., Blat., N. 78, 1854, also in Mon. Auric. Viv., p. 79, 1856, also in Brit. Mus. Cat. Auriculidæ, p. 60, 1857, also in Mon. Auriculaceorum, p. 337, 1876. H. and A. Adams, Gen. Rec. Moll., Vol. ii., p. 239-240, 1858. Pätel, Cat. der Conchylien-Sammlung, p. 114, 1873. Neville, in Hand List of Moll. in Indian Mus. p. 222, 1878.

Habitat. New Ireland, Solomon Islands, Pfr., in Mon. Auriculaceorum 1876, Island of Guam, G. Neville in his Hand List of Mollusca in the Indian Museum at Calcutta on the authority of Pro. W. Newcomb.

Variety *minor*, Pfr., Island of Guam, Pfr., in Mon. Auriculaceorum, p. 337, 1876.

40** PYTHIA REEVEANA, Pfeiffer.

Pythia Reeveana, Pfr., in Zeitschrift für Malak., p. 190, 1853; Pfr., in Synop. Auriculaceorum in Mal. Blatter, N. 80, p. 149, 1854; Pfr., in Mon. Auric. Viv., p. 81, 1856; Pfr., in Brit. Mus. Cat. Auriculidæ p. 61, 1857; Pfr. in Mon. Auriculaceorum, p. 340, 1876. Pätel, in Catalogue der Conch.-Sammlung, p. 114, 1873. H. and A. Adams, Genera Rec. Moll. Vol. ii., p. 239, pl. 82, fig. 3.

Scarabus imbrium, A. Adams and Reeve, in the Zoology of the Voyage of H.M.S. "Samarang," Mollusca, p. 56, pl. 14, fig. 13, 1848-1850; A. Adams, in Pro. Zool. Soc., p. 147, 1850, also in Ann. and Mag. Nat. Hist. 2nd Series, Vol. viii., p. 66,

Scarabus Reeveanus, in Reeve's Conch. Icon., Vol. xii., Scarabus 1860, species 6, pl. i., fig. 6. Issel's Molluschi Borneensis, p. 61, 1874.

Pfeiffer considers that Woodward's *Polydonta scarabæus*, mentioned at p. 304 of the edition of 1875 of his Manual of Mollusca, pl. xii., fig. , is a synonym and illustration of this

species, the editor of that edition brackets it as being *Scarabus imbrium* of Montford, I presume in his Conchyliologie Systematique, Vol. ii., 1810, p. 307, so that in reality this species has been twice saddled with the name of *imbrium*, first by Adams and Reeve in 1850 as shown above, and again by Woodward. Adams and Reeve's name would not stand good because Montford in his Conchyliologie Systematique, Vol. ii., p. 307, 1810, had described the well known species *Pythia scarabæus* of Linneus, (*Helix scarabæus*, Linn.) under the name of *imbrium*. Pfeiffer altered the name in 1853.

Habitat. On the authority of Cuming, Pfr., gave the habitat of this species in the Brit. Mus. Cat. as the Philippine Islands, and on the authority of A. Adams, as Celebes and Borneo in 1857. Reeve in his Monograph in 1860, gives no habitat, although his specimen figured was from Cuming's Collection. I have not seen Issel's work on the Mollusca of Borneo, published in 1874, otherwise he would have settled the point.

The *Scarabus imbrium*, figured and described by Kuster in Martini and Chemnitz Conchylien-Cabinet, Sp. 1, pl. 1, fig. 1, 2, 5, p. 8, 1844, is *Pythia scarabæus* of Linneus.

41* PYTHIA REGULARIS, *Gassies*.

Scarabus regularis, Gassies et Montrouzier, in Journal de Conchyliologie, Vol. xxvii., p. 129, 1879; Gassies, in Faune Conchyliologique de la Nouvelle Calédonie, by J. B. Gassies, part 3rd, p. 56, pl. iii., fig. 14, 1880.

Habitat. Maré, Lifu, Loyalty Islands, Mr. Richard Rossiter. I have not seen this species.

42*** PYTHIA SAVAIENSIS, *Mousson*.

Pythia savaiensis, Mous., in Journal de Conchyliologie Vol. xvii., p. 345, 1869, also in Journ. de Conch., Vol. xviii., p. 133, 1870; Pfr., in Mon. Auriculaceorum, p. 341, 1876.

Pythia savaiensis, Pease, in Pro. Zool. Soc., 1871, p. 477.

Pythia Lessoni, Blain.= *Pythia savaiensis*, Mousson, G. Neville, in Hand List of Mollusca in Indian Museum at Calcutta, p. 223, 1878.

Pythia savayensis, Schmeltz, in Catalog. v., of Muscum Goddefroy, p. 87, 1874.

Habitat. Savaii, Manua Islands, and Ovalau, Mousson, on the authority of Gräffe; Island of Savaii, Pease, in Pro. Zool. Soc. p. 477, 1871.

Unless considerable care is taken much confusion will take place about this species—if a species it is, which I very much doubt—owing to the name having been altered already twice in its spelling. Originally spelt by Mousson *Savaiensis* it was altered by Schmeltz in 1874 to *Savayensis*, and subsequently by Pease in 1877 to *Savaiiensis*. Pätel it will be observed considers the species only a variety of *pantherina* of Adams, while Neville considers it a variety of *Lessoni* of Blainville.

Neville records his specimens of *Pythia Lessoni*, Blain.= *P. savaiensis*, Mousson, first from Vavan, which should read Vavau, second from Maré Lifu, Loyalty Islands, both on the the authority of Layard; third Savay Ovalau, from Godeffroy.

43** PYTHIA SCARABÆUS, *Linneus*.

Helix scarabæus, Linn.,—a perfect form—Syst. ed. 10, p. 768, N. 571; Mus., Sud. Ulr., p. 663, N. 361, Syst. ed. 12, p. 1241, N. 655; Born., Test. p. 365, 1780; Chemn., Conch., ix., 2, p. 179; Schröt., Einl. ii., p. 122; Gmel., Syst., p. 3613, N. 1; Dillw., Deser. Cat. ii., p. 85, N. 1; Burr., Elem. t. 20, f. 1.?

Helix pythia, Mull., Hist. Vern. ii., p. 88, N. 286.

Pythia helicina, Bolt., Mus., p. 105, N. 1346, ed. Nov. p. 74, N. 1319.

Pythia rictans, Schum. Essai, p. 229.

„ *imbrium*, Mörch., Cat. Yold. p. 37, N. 771.

Pythia scarabæus, Pfr., in Z. of M., 1853, p. 127; also in Syn. Auric., N. 81, also Mon. Auric. Viv., p. 82; Pfr., Brit. Mus. Cat. p. 62, 1857, also Mon. Auriculaceorum. 1876, p. 340; H. and A. Adams, Gen. Rec. Moll., ii., p. 239, pl. 82, fig. 3a. 1358.

Bulimus scarabæus, Bruguière, in Eneye Method., i., p. 340, 1789-1892.

Scarabus imbrium, Mont., Conch. Syst. ii., p. 307, 1810; Ferrussac, Prodr. p. 101, N. 1; Blain., in Dict. Sc. Nat., v., 48, p. 31; Lesson, Voy. Coquille, p. 333, N. 78, pl. 10, fig. 5; Leach, Zool. Misc. i., p. 96, pl. 42; Troschel, in Wiegman Arch., 1838, i., p. 204, t. 4, fig. 1; Küster, in Conch. Cabinet, p. 8, pl. i., fig. 1, 2, 5, 1844; Pot et Mich., Gul. Donai, i., p. 207; Sow., Conch. Man., fig. 299; Reeve, in Ann. and Mag. Nat. Hist., ix., p. 220, pl. 4, fig. 5-8; also Conch. Syst. ii., t. 188, fig. 11, also in Conch. Icon., sp. 5, pl. i., fig. 5, 1860; M. E. Gray, Fig. Moll. Anim., pl. 306, fig. 3.

Scarabus Lessoni, Blain., in Dict. Sc. Nat., v., 48, p. 32; Lesson, Voy. Coquille, ii., p. 334, pl. 10, fig. 4; Oken Isis, 1833, t. 1, fig. 4; Reeve, in Ann. and Mag. Nat. Hist., ix., p. 220, pl. 4, fig. 5, 8, also in Conch. Syst. ii., p. 188, fig. 5, 8; A. Adams, in Pro. Zool. Soc., 1850, p. 147, also in Ann. and Mag. Nat. Hist. 2nd Series, viii., p. 67.

Auricula scarabæus, Larn., Hist. vi., 2, p. 139, N. ed. 6; Desh. in Larn. Hist. viii., p. 327.

Auricula petiveriana, Desh., in Larn. Hist. ed. nov. viii., p. 339, N. 29.

Polydonta Listeriana, Beck, Index Mol. p. 102, N. 6; Beck, Index Mol. p. 102, N. 8.

Scarabe austral, Chem., Lec. Elém., p. 240, fig. 910-911; Lister, Hist., pl. 577, fig. 31.

B.—Imperfect form with the labrum not expanded.

Pythia pantherina, A. Adams, variety *Pythia savayensis*, Mousson in Pâtel's Catalogue der Conch., p. 114, 1873.

Rumph., Amboin. p. 91, t. 27, fig. 1; Guatt, Test., t. 4, fig S; Knorr. Vergnug, vi., t. 19, fig. 2, 3.

Helix scarabæus, Chem., Conch., ix., t. 136, fig. 1249-50-53; Wood, Ind. pl. 32, fig. 1.

Scarabus imbrium, Blain., in Dict. Sc., Nat., Pl. Moll. 54, fig. 5; Kuster, in Martini and Chem. Cab., p. 66, pl. 9, fig. 11, 12, 1844; Guér., Icon. Moll., p. 17, pl. 7, fig. 6.

Polydonta imbrium, Beck, Index Moll., p. 102, N. 7.

Pythia helicina, Mörch., Catal. Yoldi, p. 37, N. 772.

Judging from the above list of references, principally taken from Pfeiffer Brit. Mus. Cat. 1857, this shell has been a severe "bone of contention" amongst the authors who have written about it, but thanks to the able masterhand of the late Dr. Ludovico Pfeiffer this and many other species of shells have been restored to their proper position. In addition to these references I find the following also recorded by Pfeiffer in his work on the Auriculacæ of 1876.

Pythia scarabæus, Linn., var., in Journal de Conch., Vol. xx., p. 322, 1872=*Pythia rictaus*, Shüm., Ess., p. 229, the habitat of which he gives as Naucouri, Pulo Panjang (Rhrdt.) Kar Nicobar (Kirp.) a large umbilicated species—also *Pythia petiveriana*, A. Adams et Reeve differt: testa minore et planiore—and with a closed umbilicus.

Habitat. Naucouri (Rhrdt); Kar Nicobar (Kirp).

Pythia scarabæus, Pâtel, Cat. p. 114, 1863.

Habitat. Molluccas, New Ireland and New Hebrides, Pfeiffer.

Pythia scarabæus, Linn., in Neville's Hand List of Moll. in the Indian Museum at Calcutta, p. 221, 1878.

Habitat. Nicobars, on the authority of Dr. F. Stoliczka.

44*** PYTHIA SEMISULCATA, *A. Adams.*

Scarabus semisulcatus, A. Adams, in Proceedings of the Zoological Society of London, 1850, p. 151, also in Ann. and Mag. Nat. Hist. 2 series viii., p. 69. Reeve, Conch. Icon., Vol. xii., Sp. 9, pl. ii., fig. 9, Monograph Scarabus.

Pythia semisulcata, Pfr., Synop. Auric. in Mal. Blat., i., p. 149, 1854, also Mon. Auric. Viv. p. 93, 1856, also in Brit. Mus. Cat. Auriculidæ, p. 70, 1857, also in in Mon. Auriculaceorum, p. 342, 1876. H. and A. Adams, in Gen. Recent Moll., Vol. ii., p. 240, 1858.

45*** PYTHIA SINUOSA, *A. Adams.*

Scarabus sinuosus, A. Adams, in Proceedings of the Zoological Society of London, 1850, p. 151, also in Ann. and Mag. Nat. Hist. 2nd series, Vol. viii., p. 69. Reeve, Conch. Icon. Mon. Scarabus Vol. xii., Sp. 21, pl. iii., fig. 21.

Pythia sinuosa, Pfr., in Synop. Auric. in Mal. Blat., Vol. i., p. 149, 154, also in Mon. Auric. Viv., p. 93, 1756, also in Brit. Mus. Cat. Auriculidæ, p. 70, 1857, also in Mon. Auriculaceorum p. 342, 1876. In H. and A. Adams, Gen. Rec. Moll., Vol. ii., p. 239-240.

Habitat. Isle of Negros, Philippine Islands, Pfeiffer and Reeve on the authority of Cuming,

46*** PYTHIA STRIATA, *Reeve,*

Scarabus striatus, Reeve, in Annals and Magazine of Natural History, Vol. ix., p. 220, pl. 4, fig. 9, 1842, also in Conch. Syst. Vol. ii., pl. 188, fig. 9, 1842, (Vol. iii., p. 109, Kuster), also in Conch. Icon., Vol. xii., Mon. Scarabus, Sp. 26, pl. iii. fig. 26. Kuster in Martini and Chemnitz, Conch. Cabinet, p. 64, pl. 9, fig. 7. A. Adams, in Proc. Zool. Soc., 150, p. 148, also in Ann. and Mag. Nat. Hist. 2nd series, Vol. viii., p. 67.

Pythia striata, Pfr., Synop. Auric. in Malak. Blat., Vol. i., p. 149, 1854, also in Mon. Auric. Viv., p. 94, 1856, also in Brit. Mus. Cat. Auriculidæ, p. 71, 1857, also in Mon. Auriculaceorum p. 342, 1876. H. and A. Adams, in Gen. Rec. Moll., Vol. ii., p. 239-240, 1858. Pätel, Cat. der Conch. p. 114, 1873.

Pythia striata, Reeve, is made by G. Neville in his Hand List of the Mollusca in the Indian Museum at Calcutta, p. 223, 1878, a variety of *Pythia Lessoni* of Blainville, which again he makes =to *P. savaiensis* of Mousson.

Auricula scarabæus, of Quoy and Garnard, in Voy. Astrolabe, Vol. ii., p. 162. pl. fig. 24, is considered by Pfeiffer as a synonym of this species.

Habitat. San Nicolas Island of Zebu, Philippines is the habitat recorded by Reeve and Pfeiffer, on the authority of Cuming. Pfeiffer gives the Indian Archipelago on the authority of Quoy. Neville gives for his variety *striata*, Reeve, Galathea Bay, Katchall and Teressa on the authority of Dr. Stoliczka and F. A. de Roepstorff Esq. I possess good specimens of this species from the New Hebrides Islands.

Neville has in his collection a variety of this shell he calls (prox. *striata*) from Great Cocos Island and from Borneo Straits, collected by Dr. Stoliczka.

Reeve in his Conchologia Iconica remarks that the example of this species figured by him in pl. iii., fig. 26 is not a characteristic one, and refers to that given in his Conch. Syst. as mentioned as the true original type.

47** PYTHIA TORTUOSA, *Mousson*.

Pythia tortuosa, Mousson, in Journal de Conchyliologie, Vol. xix., p. 19-20, pl. iii., fig. 6, 1871. Pätel in Cat. der Conch., p. 114, 1873. Schmeltz, in Cat. v., of Mus. Godeffroy, p. 87, 1874; Pfr., in Mon. Auriculaceorum, p. 339, 1876. Neville, in Hand List of Moll. in Ind. Mus., p. 221, 1878.

Habitat. The Islands of Uea, Wallis Island, and Futuna Island, Long. 176° W., Lat. 13½° S. ; Pfeiffer on the authority of Gräffe.

48* PYTHIA TRIGONA, *Troschel*,

Scarabus trigonus, Troschel, in Weigmann's Archives für Naturgeschichte, Vol. i., p. 207, pl. 4, fig. 3, 1838. Reeve, in Ann. and Mag. Nat. Hist., Vol. ix., p. 219, pl. 4, fig. 2, also in Conch. Systematica, Vol. ii., pl. 188, fig. 2, also in Conch. Icon. Vol. xii. Mon. Scarabus, Sp. 22, pl. iii., fig. 22, 1870. Küster, in Martini and Chem., Conch.-Cabintet, p. 10, pl. i., fig. 6, 1844 ; A. Adams and Reeve, in Zool. Voy. H.M.S. "Samarang," p. 56, pl. 14, fig. 12, Mollusca, p. iii., 1850. A. Adams, in Pro. Zool. Soc., 1850, p. 148, also in Ann. and Mag. Nat. Hist. 2nd Series, Vol. viii., p. 67.

Pythia trigona, Mörch., in Catalog. Conch. quæ reliquet D Alphonso D Aquirra et Gadea, comes de Yoldi, p. 37, N. 767, Fas. i., 1852 ; Pfr., in Synopsis Auric. in Malak. Blätt. i., p. 149, 1854, also in Mon. Auric. Viventium, p. 75-76, 1856, also in Brit. Mus. Cat. Auriculidæ, p. 56, 1857, also in Mon. Auriculaceorum, p. 335, 1876. H. and A. Adams. Gen. Recent Moll., Vol. ii., p. 239-240, 1858. Pätel, Catalogue der Conch., p. 114, 1873 ; Neville, in Hand List of Moll. in Ind. Mus. at Calcutta, p. 222, 1878.

Scarabus trigonus, Chem., in Manual Conch., Vol. i., p. 476, fig. 3514 ; Tryon, in Amer. Jour. of Conchology, Vol. v., part ii., p. 111, 1869-70.

Habitat. Putuloz near Bentang, Pfeiffer, on the authority of Troschel ; also Borneo on the authority of A. Adams ; also Sarsogon, Island of Luzon, Philipines, on the authority of Cuming also Bombay, in Mon. Auric. 1876 ; Andaman Islands, Indian Archipelago, G. W. Tryon, junr. Neville gives the habitats as Bassein, on the authority of W. T. Blandford, Esq. ; Rangoon, Dr. Hungerforde ; Trincomalee and Borneo Dr. Stoliezka ; Sinkip Island, J. Wood-Mason. Esq.

49 PYTHIA UNDATA, *Lesson*.

Scarabus undatus, Lesson, in Zoologie Voyage de la Coquille, Vol. ii., p. 336, pl. 10, fig. 6, 1830. Reeve, in Ann. and Mag. Nat. Hist. Vol. ix., p. 219, pl. 4, fig. 4, also in Conch. Systematica Vol. ii., pl. 188, fig. 4, 2842, also in Conch. Icon., Vol. xii., Mon. Scarabus, Sp. 17, pl. 11, fig. 17, 1860. Küster, in Martini and Chemnitz, Conch.-Cabinet, p. 65, pl. 9, fig. 8, 9, 1844. A. Adams in Pro. Zool. Soc., 1850, p. 149, also in Ann. and Mag. Nat. Hist. 2nd Series, Vol. viii., p. 68.

Pythia undata, Pfr., in Mon. Auric. Viventium p. 90, 1856, also in Synop. Auric. in Malak. Blätt., i., p. 149, 1854, also in Brit. Mus. Cat. Auriculidæ, p. 68-69, 1857, also in Mon. Auriculaceorum, p. 343, 1876.

Auricula scarabæus, variety, Desh., in Lam. Hist. Natur. Anim. sans Vert., new edit., Vol. viii., p. 328, 1838.

Polydonta abbreviata, Beck, Index Moll. p. 101, 1837.

Habitat. Waigeau Island, North-west New Guinea, Kuster, 1844.

50** PYTHIA VARIABILIS, *Hombroun et Jacquinot*.

Scarabus variabilis, Homb. et Jacq., in Zoologie de Voyage au Pôle Sud., Vol. vi., p. 39, pl. 10, fig. 1-3.

Pythia variabilis, Pfr., in Mon. Auric. Viventium, p. 98, 1856, also in Brit. Mus. Cat. Auriculidæ, p. 74, 1857, also in Mon. Auriculaceorum, p. 343, 1876.

Habitat. Arrow Islands and New Guinea.

51** PYTHIA VERREAUXI, *Pfeiffer*.

Pythia Verreauxi, Pfr., in Malakozoologische Blätter, p. 173, 1856, also in Brit. Mus. Cat. Auriculidæ, p. 63, 1857—as *Pythia Verreauxi*, by mistake—also in Monographiæ Auriculaceorum, p.

336-337, 1876, also in *Novitates Conchologicae*, Vol. iii., 356, 1867-69, pl. lxxxiii., fig. 5, 6.

Habitat. Santa Catalina Island, one of the Solomon Group, a comparatively small Island to the south of San Christoval.

It will be found on reference, that Pfeiffer placed this species (which is imperforate) in the Brit. Mus. Catalogue in his third group which have the umbilicus openly perforated or umbilicated; this mistake is rectified by him in his Monograph of 1876.

I have a large number of specimens of this pie-bald species from Santa Catalina some of which are absolutely imperforate, while others are openly umbilicated some have a light coloured peristome, others are blackish with every intermediate shade, the upper half varies from olive-brown to blackish-chestnut; all have "distinct arcuate" or "deep arched striæ" near the suture besides many other diagnostic characters resembling *verreauxi* in one specimen and *castanea* in another, so much so, that I have no hesitation in stating that I believe the two last named species are one and the same, possibly having slight local variations, but nothing to justify their being made distinct species. The only doubt in my mind is whether they are not both only one of the many varieties of *Pythia scarabæus*.

52** PYTHIA WALLACEI, Pfeiffer.

Pythia Wallacei, Pfr., in Pro. Zool. Society of London, 1861. p- 28, pl. 2, fig. 2, also in *Monographiæ Auriculaceorum*, p. 338, 1876.

Habitat. Island of Batchian, Pfeiffer, on the authority of Wallace.
